

REMARKS

Claims 1-9, 11, 12 and 13 and new Claim 14 are currently active in the case.

Reconsideration is respectfully requested.

The present invention relates to a composition of water-soluble copolymers.

Claim Amendments

Claim 3 has been canceled in favor of amended Claim 13 which is now limited to vinylpyrrolidones and vinylimidazoles as monomer (b). Further, new Claim 14 has been introduced in which the molecular weight of the water-soluble polymer is defined as having a weight average molecular weight of 4000 to 60,000 D as set forth in original Claim 5. Accordingly, none of the amendments are believed to have introduced new matter into the case. Entry of the amendments is respectfully requested.

Prior Art Rejection

Claims 1-12 stand rejected based on 35 USC 102 or 103 as anticipated by or rendered obvious over Galleguillos, U.S. Patent 6,361,768. This ground of rejection is respectfully traversed.

The Galleguillos patent discloses a polymer composition that is useful as a thickener or rheology modifier in personal care formulations. As described at column 4, lines 36-49 of the patent, the composition requires three basic components which are a) 0.05 to 20 mol % of at least anionic monomer, b) 10 to 45 mol % of at least one cationic monomer having an amino functional group, and c) 35 to 95 mol % of at least one non-ionic hydrophilic monomer.

An important way in which the present invention as claimed is distinguished over the Galleguillos patent is that the monomers from which the copolymer product of the reference is formed results in a copolymer that has a T_g that is greater than about 50°C (see column 4, lines 43-46 and column 7, lines 20-26). On the other hand, the presence of polyalkyleneoxide monomers in the present composition is relatively high as indicated by the content range of 60 to 99 %. At these content levels of the polyalkyleneoxide monomer, the glass transition temperature of a given product would be significantly less than 50°C . Thus, in order for a composition to be within the scope of the disclosure of the reference, the polyalkyleneoxide monomer content must be comparatively low. In none of the examples of the Galleguillos patent is the polyalkyleneoxide monomer employed in a high amount. In other words, the glass transition limitation would necessarily lead one of skill in the art to copolymers containing relatively low amounts of polyalkyleneoxide monomer. This distinction alone is believed sufficient to distinguish the presently claimed copolymer from the Galleguillos disclosure.

Another way in which the present invention is distinguished over the Galleguillos disclosure is on the basis of cross-linking. That is, in order to form the water-soluble copolymer of the invention, usually no cross-linking agent is employed. Thus, the molecular weights of copolymer embodiments of the invention tend to be low. (In this regard, reference is made to new Claim 14 which limits the copolymer to a molecular weight ranging from 4000 to 60,000 D.) On the other hand, in Galleguillos, all of the examples contain a cross-linker, and because of this fact, the molecular weights of the copolymers are high, often to the extent of being dispersed in a medium. The only disclosure that the copolymer material may not be cross-linked is at column 11, lines 59-61. In the present invention, cross-linking is primarily not done by means of a cross-linking component.

Still another way in which the present copolymer is distinguished over the patent, particularly in the form of amended Claim 13 is in the presence of cationic monomer in the mixture of monomers that is polymerized. That is, present Claim 13 is limited with respect to monomer (b) in that only vinylpyrrolidones and vinylimidazoles are mentioned. Although the description of the monomer formulation of the copolymer at column 4, lines 37-48 states that monomer (b) is present in an amount of 10 to 45 mol %. In the examples however, where one of the two cationic types of vinylpyrrolidone and vinylimidazole is mentioned, Examples 16 and 17 disclose N-vinyl pyrrolidone in amounts greater than over 90 wt %! Accordingly, applicants submit that Claim 13 is patentably distinguished over the Galleguillos disclosure.

Claims 1-12 stand rejected based on 35 USC 102 or 103 as anticipated by or rendered obvious over Morschhäuser et al, U.S. Patent 6,645,476. This ground of rejection is respectfully traversed.

Morschhäuser et al describes a water-soluble polymer preparation which is useful in cosmetic and pharmaceutical applications. The composition is comprised of a polymer that is prepared by the copolymerization of two macromonomers (A) and (B). Macromonomer (A) as described at column 3, lines 25-28 of the patent must contain C₁₀₋₂₂ alkyl radicals. On the other hand, component (a) of the present claims is limited, in the event that substituent R³ is alkyl, to alkyl groups that range in carbon atom content from 1 to 4 as shown on page 3, line 34. Thus, the disclosure of the patent does not anticipate the present invention, and the description of macromonomer component (A) in column 3 does not suggest the presently claimed range of 1 to 4 carbon atoms. Accordingly, the presently claimed invention is believed to be neither anticipated or rendered obvious in view of the cited patent. Withdrawal of the rejection is respectfully requested.

Claim 13 is believed patentably distinguished over the cited Morschhäuser et al patent.

It is believed that the application is in proper condition for allowance. Early notice to this effect is earnestly solicited.

Respectfully submitted,

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